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EXPERIENCES IN 1931 WITH THINNING APPLES

By R. L. EVARTS

(Sixty-first annual report of the secretary of the Michigan State Horticultural Society)

During at least two of our annual meetings we have heard talks on the production of apples in the Northwest. In those talks thinning was stressed considerably, and I think most of us listened to it very attentively and with an open mind, but after it was all over some of us said, "Well, that is all right for the grower with young trees, just in the prime of life, when it is very easy to thin those apples, but I don't believe it is profitable to thin our old Baldwin or other mature trees all the way from forty to eighty years old, where it would be necessary to use a ladder twenty to twenty-four feet in height."

That has been discussed among growers quite a little, with always the idea that it could not be done and was not profitable. During 1931 I have done some thinning, and I believe we have facts and figures here to show you that it is profitable and it can be done on trees that are in reasonably good health and of good vigor.

Why did I think that thinning was necessary? First of all I want to answer that it is competition. Competition makes us all grow better fruit. In my holdings we have a great number of Baldwin trees, and in order to grow those Baldwins to a size that was salable in competition with what some of the rest of you grew, we had to do something.

In 1929 it was rather dry around my place and we tried a little irrigation without any success other than to ease my mind a little bit when I saw the water running onto the soil from a pipe line we had laid from a lake a mile and a half away.

The winter of 1930 and '31 came along with very little snow. The ground was dry from 1930. I decided that we would have to do something in order to try save ourselves during the season of 1931. First of all we started out to prune. We did a reasonably heavy job of pruning on most of our trees, not too heavy, but a good thinning out, with an idea that perhaps we would over-balance the root system a little bit and make better use of what moisture we would have.

Spring came along with very little rain. That helped us make up our minds that it was necessary for us to thin, so we started out with thinning peaches, which we did during the second and third weeks of June. During the third week of June we finished the peaches and made up our minds we

would try out at least one block of Baldwins. We did not know what it would cost; we had a little idea of what we thought we could afford.

We put the thinning crew into this one-ten-acre block of Baldwins, trees about fifty-five years of age and of good height, as a matter of fact so high that practically all the work was done from twenty and twenty-four-foot ladders.

We started in with an idea that if we could do this work for seventy-five cents a tree we would be satisfied, and at least cover part of our acreage. We found the cost was a little less than we expected, so we continued. After we did a few trees the work looked so good that we couldn't leave it. As the days went by, the workers became more adapted to the thinning of the trees and the cost decreased. So we kept at it, going from one block to another, until we covered our entire 200 acres of bearing orchard. I don't mean to say that that was all old, mature trees. Some of the trees were rather easy to thin.

You will note that most of it was done during the last week of June and the early weeks of July. As a matter of fact we finished during the early part of the last week of July. I believe that it is the proper time to thin. I mean by that to get after them early. We thinned some of our Baldwin trees before the June drop was finished. It was a little more expensive to do that, but we felt we could not wait until the tree had spent its strength on growing some of those surplus apples.

I have told you the time we started in to do our thinning, late in June and during the early part of July, all from twenty and twenty-four-foot ladders, and due to the fact that the labor is all hired labor, day labor, we use thinning shears, or grape shears, for our work. From my own experience I found it was hard to snip off these apples with your thumb nail or prune them off with your fingers, especially where you have doubles, without injuring the stem of the apple you wish to leave.

I still think that perhaps I or one or two men that we want to train could do that successfully, and if so you would do it cheaper and quicker than with shears. But I am not of the opinion that it would be safe to send a crew of fifteen or twenty men out into the orchard and let them do the work with their fingers. I am afraid they would take off too many of the apples that you wish to leave. (Note: Orchard labor in Maryland does not use shears.)

What did we take off? We started out, we will say, as a green hand at thinning. We did know we wanted the doubles off, and what defective ones we could see, and where they were heavy on the branch we tried to thin them out. Now after it is all over I don't think we thinned them heavily enough. We only left them from four to six inches apart. We did do a good job, although once in a while in the upper parts of the trees if it was too difficult to reach some limb we left it and called it just a good commercial job.

We let these apples drop to the ground. That is the quickest way out, and it is surely the cheapest. From my experience with the codling moth and my experience in trying to fight curculio, I am of the opinion that we should either take the apple at the time we try to thin it, or drop it to the ground and then clean it out.

You will want to know how much it cost. Well, we had to pay twenty

cents an hour for labor. We found it took on the average of three hours per tree on these old Baldwin trees. Some took longer and some of them took less time. But on the average it was about three hours' time. You can compute your own cost according to what your labor costs you per hour. It cost us six cents a bushel for every bushel of Baldwins we picked. That was exactly our picking cost this year.

You might want to know how we know that it paid to do all this work. We had twenty men there for a total of six weeks this summer thinning peaches and apples, and spent in round figures $1500. We didn't know that it was going to return any profits, but in order that we might know, we left two check trees in the first block of Baldwins that we thinned. We didn't make any special selection of these trees. Perhaps if we had we might have been fortunate enough to pick the right ones and give even a better record, but we didn't.

This represents a ten-acre block, and the first tree, what we call the north series, or series A, was located about six rows in from the north side of the orchard and nine rows from the east. Later on in his work in the orchard we left another tree, approximately eight rows over in from the north side and about eight from the east side where it had lots of competition with its brother trees surrounding it for moisture and plant food; material with which to make apples.

We selected two of the thinned trees along with the one unthinned tree in each group, giving us three trees in two groups. Over across a lane, was another block of Baldwins. We had one tree in there that we had picked 3540 apples off of at the time we thinned them. In order to figure up our profit and loss, we took the cost, what we were selling our apples for, and we figured our A grade at 75 cents a bushel; B, 38 cents; and on ciders we were fortunate enough to be getting 15 cents a bushel.

Average value of crop from unthinned trees	$2.89
Average value of crop from thinned trees	6.15
Average value of bushel from unthinned tree	.18
Avereage value of bushel from thinned tree	.46
Average yield of unthinned trees	16 bushels
Average yield of thinned trees	13 2-5 bushels

In figuring up our yield on Baldwins this year we picked approximately 9,300 bushels. Figuring that at 46 cents a bushel, which was the value of our thinned apples, gives us a gross return of $3,717. That is after the deduction of 60 cents per tree for thinning. The value if they had been unthinned would have been 9,300 bushels at 18 cents a bushel, $1,674. That would be ruinous. It is almost that bad even when you thin them. But the difference between the two was over $2,000. As I stated before, the average price per bushel for thinning on our Baldwins was six cents. On our whole crop it figured 4½ cents per bushel for thinning.

Aside from the actual dollar and cents you can figure out, I believe there are a few other points we might take into consideration when we thin. First of all, it costs less to pick them, especially if you are picking by the hour. Also that would be true if you are picking by the bushel, as a larger apple picks much faster than the small one, and the picker is better satisfied, makes better wages, and as a rule you can price your per unit work at less money. We started out at five cents this year, but even after we thinned, the apples

were so small that the pickers were making no headway, so we had to raise it to six cents per bushel for picking. The grade is more uniform. That is not only noticeable on our Baldwins, but also on the larger apples, Kings and Spies, Greenings. The B grade was larger.

While there was no check made on color, from all we have been told about the relation of the number of leaves to the number of fruit on the tree and the water content and relation to color, I believe that the thinned trees should and no doubt do give you better color.

Again, we have to sell our apples after we grow them. Some of you leave that to an exchange manager. Being on the other side of the state where we have no exchanges we have to do it independently. If you can take a buyer into your orchard and show him good sized fruit, uniform in size also, it is more attractive and he is more willing to talk business with you. I believe this year if I had not thinned it would have been impossible to interest a buyer by taking him into some of those blocks of Baldwins, especially.

There may be other points as to why we should thin, and I might say I believe that in order for us to grade our apples so as to satisfy the Department of Agriculture or our buyers, we have to start back on the tree, and get the right kind of fruit on the tree, and thinning is one means of reaching that point.

* * *

THE THINNING QUESTION

Even in good years with everything in their favor, many growers seem to question the value of thinning. Others have adopted thinning as a regular practice. There are figures to show that thinning increases size and color, increases yield of better quality, but in many cases, decreases total yield. There are figures to show that thinning favorably influences bearing habits of the tree.

To thin or not to thin? How much shall we thin? Some growers merely break clusters and remove defective fruit. Some thin only the heaviest parts in the lower part of the tree. There are all sorts of ways to go about the job.

Let's see what others think of thinning.

Dr. E. C. Auchter, addressing Maryland State Horticultural Society, January 1932:

"Wait until June drop is well over on late varieties before you start thinning, and then spend most of your energies and money allotted for thinning, on those varieties which normally show greatest thinning benefits. Don't attempt to thin to any uniform distance apart, but thin the individual trees or limbs on the tree, depending upon their crop. Recent experimental evidence indicates that from 30 to 40 leaves per apple are necessary for production of fruit of good size and color. Recent evidence also indicated that the elaborated materials formed by the leaves will benefit apples at quite some distance away. This shows that fruit need not be heavily thinned on certain limbs, if other limbs have light crops, or that all clusters, at least in the case of many varieties, need not be separated if the crop is otherwise light on the limb and tree."

Mr. H. S. Nolt, Fruit Grower, Columbia, Pa., addressing the Pennsylvania State Horticultural Association, January 1932:

"One of the most important experiences that we had this year was the old, old story of thinning. Our extension friends have been lecturing and preaching to us for years on how to thin fruit, but we are afraid yet that we will thin too hard. I learned, this year, that Yellow Transparent should be thinned very early. Ordinarily we are taught to wait until the June drop, but as the fruit set was unusually heavy, it was necessary to thin much earlier."

Mr. G. L. Hayman, Fruit Grower, Northbrook, Pa., addressing the Pennsylvania meeting, January 1932:

"Leaves were seriously injured by leaf hoppers . . . . were pale and lacking in vitality. As usual, we were too stingy with our thinning where real hard thinning should have been done."

The Mountaineer Grower, May 1932, published by West Virginia Horticultural Society has an article "200 Barrels per Acre—And $150 Profit". The article describes a well-managed orchard on *good* soil in 1931 and states in part: The owner figured that it might have cost him $6000 to thoroughly thin the 200 acres. He didn't. If he had, he might have had the same bulk of apples and only cut his profit by $6,000. Or he might have had more and bigger apples and made more than the $30,000 profit. Or he might have had less tonnage by reason of young apples pulled, and gotten less profit and still had the $6000 thinning bill. All that is conjecture; not quite provable. The point is that he didn't thin, and that he made $150 per acre profit. That last is what we are studying. But, similarly, if no one *stored* their fruit, and all rushed to sell—the state of the market during the rush, can be imagined."

Apparently all of these comments are favorable to thinning, even during 1931, when the outlook was discouraging. Note that the $150 per acre profit" grower did not say that thinning was "bunk". He knew his soil and his trees, and what they could do.

To thin or not to thin? How much? Well, that is a question that each grower must decide for himself. If he exports, he will not thin as heavily as the domestic market grower who must have larger size on fruit. If thinning is a means of reducing culls, it is much easier to break off little culls and drop them, now, than to pick off the same, larger culls, later, and haul, sort and dump them (or worse, try to sell them) later. Of course, the market may not be high, even for better grades, this season. If so, low grade fruit will not be very profitable.

How, then shall we summarize thinning? Thin according to tree size, vigor, variety, and soil moisture conditions. Thin according to your market requirements and your pocketbook limitations. Don't try to remember distance apart in inches, but thin according to what the tree can stand. Shears may be all right, but it is easy to snap apples off with the fingers, by merely breaking them at the stem. This will vary with variety.

Nothing has been said about thinning peaches. Who can afford *not* to thin them, if there is any kind of a favorable market, or if trees are set heavily or fruit is not clean? Thin peaches early and take off enough peaches to prevent tree breakage and to increase fruit size. Six to eight inches is the usual rule.

It is rather difficult to find discussions on thinning, but this issue of "The

Maryland Fruit Grower" contains an experience in thinning apples in Michigan last year. But remember as you read, that thinning isn't magic. It's tedious, expensive work and its results depend upon degree of thinning, and even more upon the tree, its age and vigor, its pruning, soil management and fertility, and the kind of spraying that it is receiving.

The success of fruit growing depends upon increased production of clean fruit per orchard, per acre or per tree.

* * *

FRUIT CROP CONDITIONS

It is still rather early to attempt to forecast crop, but reports of conditions to date, should be of interest.

Maryland

On June 1, reports from 66 growers gave the following estimates. In some counties there were not enough reports to show true average and figures also may be high or low in some cases, due to reports based on certain varieties.

Apples—30-40%—Montgomery and Charles Counties
41-50%—Allegany, Washington, Baltimore, Harford, Howard, Talbot Counties
51-70%—Carroll, Frederick, Anne Arundel, Caroline, Wicomico, Worcester Counties.

Peaches—20-40%—Washington, Worcester, Montgomery, Kent Counties
50-70%—Baltimore, Howard, Talbot, Allegany Counties
71-80%—Frederick, Cecil, Harford Counties.

Pears—ranged from 25-50%.

In Maryland, both early apples and peaches are generally rather heavily set. There is some variation in sections, in the set of later varieties of apple and peach, but on June 10, practically all peach varieties were moderately heavy, depending upon location, and late apples were showing rather consistently good sets. Possibly Delicious, York, Stayman and Stark will be light in some sections. Generally, Jonathan, Rome, Ben Davis and Gano are well-filled.

Scab has shown up in some sections. Leaf hopper seems a little dangerous in many orchards. Aphis injury is rather light. Curculio and tarnished plant bug have done considerable injury. Oriental moth has been busy on peaches. Fire blight has done serious damage to pears and apples in some sections, especially Central Maryland and Eastern Shore. Generally, foliage and growth are excellent, fruit is reasonably clean and growers have been thinning since early June.

The U. S. report of June 10, 1932, states conditions as follows for the whole country: Apples 58.5%; peaches 51.7%; pears 57.6%. Condition on June 10, 1931 was: Apples 75.7%; peaches 78.5%; pears, 61.4%. This means a little over half of last year's crop of apples with reports of fairly light crops in New York, the Central States and Shenandoah Valley. The Cumberland-Shenandoah section is better, but still below 1931. Pacific Northwest reports better than in 1931.

The country's peach crop is reported slightly above half the 1931 crop.

Some idea of conditions in these states can be had when reports like these are given: Illinois 9%; Indiana 16%; Missouri and Arkansas 13%. The 10 early peach states in the south expect about 30% of last year's crop. Georgia alone reports a decrease of about 10,000 cars.

New York reports a good crop of pears. Michigan is spotty, but has good prospects for early pears only. The Northwest and California have from 50 to 100% of last year's prospects for pears. Indications are for 93% of last year's crop of pears in the United States.

A GOOD BEGINNING

At the invitation of Mr. Harry F. Byrd, President of the Virginia State Horticultural Society, the presidents of 11 Eastern State Horticultural Societies together with representatives of foreign buyers, steamship lines, brokers, shippers, growers and Federal Departments met in Washington on May 11, 1932.

There was an attendance of 39 people, and the day was given to discussion of serious problems of the foreign apple trade.

Germany, Austria, France and Argentine have placed restrictions on American apples, due to San Jose scale. Three forms of export certificates were suggested and discussed, with the purpose of meeting foreign requirements. Resolutions were adopted: (1) to extend export certificate to cover San Jose scale, allowing 2% tolerance, except to countries allowing no scale whatever; (2) that export certificate continue to cover residue, maggot and other worms; (3) that standard grades only, be allowed export certificate and no unclassified fruit be allowed export.

Speakers then discussed the question of embargoes and quarantines both here and abroad, as they apply to fruit exports and imports. A resolution was adopted asking the Secretary of Agriculture to consider the revision of certain requirements on grapes imported from Argentine Republic, and to arrange, if possible, to have American apples, intended for export to Argentina, to be inspected here at port, before shipment, by Argentine inspectors, and in turn to have U. S. inspectors certify Argentine grapes before shipment to the United States. This would eliminate refusals of entry and possible losses from dumping of these fruits. This resolution was taken to the Secretary's office by a committee, and a report from the Secretary of Agriculture is to be given in the near future.

Steamship company representatives reported willing cooperation in keeping unclassified packs off foreign markets.

The horticultural society presidents in attendance then voted to form a permanent organization to be known as the Eastern Apple Growers' Council, to be composed of the presidents of the horticultural societies east of the Missouri River. Officers elected were: Harry F. Byrd, Virginia, President; John N. Dyer, Indiana, Vice-President; Walter S. Campfield, Virginia, Secretary-Treasurer.

Maryland was represented by J. A. Cohill, due to inability of President G. S. L. Carpenter to attend.

There is also a council of fruit growers appointed by the presidents of horticultural societies of Virginia, West Virginia, West Virginia, Pennsyl-

vania and Maryland to discuss the common problems of Cumberland-Shenandoah growers. Maryland is represented by G. S. L. Carpenter, J. A. Cohill and W. Lee Allen.

If these two organizations keep busy, they will do a lot toward helping to solve some of our serious problems. State lines are gone. We must act as fruit growers. Anything that affects one man's market affects every man's market in some way. If we can't export apples, they will be dumped on our home markets.

SOME NEW SMALL FRUITS

Department Circular No. 171, "The Bellmar, Southland and Redheart Strawberries", U. S. Department of Agriculture, by G. M. Darrow, and G. F. Waldo describes some new strawberry varieties. Bellmar is suggested for trial in Maryland, Delaware and New Jersey, where Premier does well. It is a good plant maker, has perfect flowers and ships well. Southland is adapted to the southern states and Redheart is a canning variety for heavier soils from New England to Maryland and west to Wisconsin and Missouri.

The Brainerd blackberry is described in Department Circular No. 220, U. S. Department of Agriculture by G. M. Darrow. This is an improved cross of Himalaya blackberry.

Growers interested should write the U. S. Department of Agriculture for these bulletins.

BOARDER OR BORDER TREES

Several state horticultural societies are campaigning against weak, off-variety, unprofitable trees and crowded filler trees. This is a worthy movement and will go a long way toward improving the fruit growing business as well as saving money for the fruit grower. Off-varieties, if the trees are thrifty, may be top-worked, but there is question of this method if the trees are large. Every grower knows his conditions and how far he can go in tree removal. It costs money to cut out trees, but it costs something to spray and care for them.

New England has had a "cuttin' bee" for several years, and poor trees or varieties have been removed or top-worked by the thousand. Virginia, Ohio, and West Virginia are at it now, and West Virginia estimates a removal of 15,000 to 20,000 trees since last fall. Wisconsin is slaying trees that don't "ring the bell". Its up to the grower to make a tree pay up or pull up.

Growers who have tried tree removal, suggest that it's a tough job for a tractor. They find it easier to chop or saw the tree off close to the ground and allow the stump to rot for a few years before removal.

Dad: "When I was young I though nothing of getting up at five o'clock in the morning."

Son: "I don't think much of it myself."

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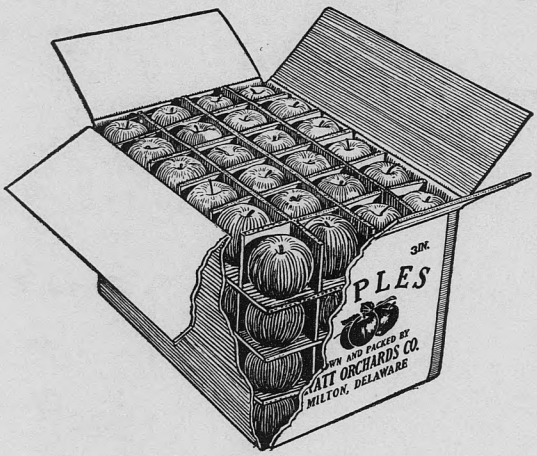

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